

Supplementary table 1 Intervention characteristics of included RCTs

Study Name	Intervention	Compliance	Control	Postop intervention	
Beaupre 2004	physiotherapist supervised exercise	land based: strengthening, aerobic; supervised by physiotherapist; 3 times/week * 4 weeks + education	all but 1 participant completed the 12 sessions	usual care: regular activities and other treatment at discretion of physician	standard postoperative mobilization routine
Bitterli 2011	home exercise	land based: strengthening and stretching, home exercises from 2 to 6 weeks, twice daily; 2 verbal and written instruction	exercises completed on 91% of the days	no intervention	usual care (outpatient rehabilitation or rehabilitation clinic)
Brown 2012	physiotherapist supervised exercise + home exercise	land based: strengthening and stretching, supervised by physiotherapist once a week + home exercise 2 times/week * 8 weeks	not reported	usual care	not reported
D'Lima 1996	physiotherapist supervised exercise	Intervention A: land based: strengthening, stretching. Intervention B: land based and pool based: strengthening, stretching, aerobic; once a week * 8weeks	not reported	no intervention	routine care

Evgeniadis 2008	physiotherapist or orthopedist supervised exercise	land based: strengthening (mostly upper limb and trunk), 3 times/week * 3	not reported	no intervention	standard rehabilitation
Ferrara 2008	physiotherapist supervised exercise + education	land based: strengthening, aerobic; supervised by physiotherapist; 5 times/week * 4 weeks + education	not reported	no intervention	postop rehabilitation programme
Gilbey 2003	physiotherapist supervised exercise+ home exercise	land based and pool based: strengthening, stretching, aerobic, supervised by physiotherapist + home exercise: 2 times/week *8weeks	97% of sessions complete	routine in-hospital physical therapy	clinic-based
Gocen 2004	physiotherapist supervised exercise + education	land based: strengthening, stretching, supervised by physiotherapist for 8 weeks; +education	not reported	no intervention	postoperative and education programme
Gstoettner 2011	physiotherapist supervised exercise + home exercise	land based: strengthening, stretching, balance; supervised by physiotherapist; once a week * 6 weeks +daily home training with written instructions	not reported	no intervention	not reported

Hoogeboom 2010	physiotherapist supervised exercise	land based: strengthening, aerobic, functional; + education	91% of the sessions completed	usual care + education	postop usual care protocol
Matassi 2014	physiotherapist supervised exercise + home exercise	land based: increasing lower extremity muscle strengthening supervised by physiotherapist; once a week* 1 week+ home exercise 5 times/week * 6weeks+ written instructions	79.4% completed	regular activities	same physiotherapy routines
McKay 2012	kinesiologist supervised exercise	land based: aerobic, strengthening, supervised by kinesiologist; 3 times/week * 6 weeks	98% of the sessions completed	placebo (upper body exercises)	standard postop care
Mitchell 2005	physiotherapist supervised exercise + home exercise	land based: pain relief, increase knee flexion and extension, gait re-education ,supervised by physiotherapist; 3 times/week * 8 weeks + home exercise 4 times/week * 8 weeks	73.6% sessions completed	preoperative consultation	usual hospital physiotherapy (post-discharge only)
Oosting 2012	physiotherapist supervised exercise +home exercise	land based: "functional tasks exercise", supervised by physiotherapist; 2 times/week + home exercise 4 times/week * 3 to 6 weeks	99% of the sessions completed	usual care (30min supervised class)	not reported

Rooks 2006	physiotherapist supervised exercise +education	land based and pool based: strengthening, stretching, aerobic, supervised by physiotherapist; 3 times/week * 6 weeks; +education on home modifications	89% of sessions completed	education via leaflet and telephone + 30- 60min supervised class	not reported
Topp 2009	physiotherapist supervised exercise + home exercise	land based: resistance training, flexibility, step training, supervised by physiotherapist, once a week + home exercise 2 times /week	13 sessions completed (range 4 to 23)	no intervention	postop rehabilitation
Tungtrongjit 2012	home exercise	land based: home quadriceps strengthening exercise for 3 weeks	Not reported	no intervention	postop rehabilitation
Villadsen 2014	physiotherapist supervised exercise	land based: standard preoperative educational package + NEMEX programme; supervised by physiotherapist; 2 times/week * 8 weeks	74% attended the pre-specified goal of 12 or more exercise	standard preoperative educational package	postop rehabilitation
Vukomanovic 2008	physiotherapist supervised exercise +education	land based: physical therapy +education	not reported	no intervention	postop rehabilitation
Wang 2002	physiotherapist supervised exercise + home exercise	land based and pool based: strengthening, stretching, aerobic, supervised by physiotherapist+ home exercise; 2 times/week	97% of sessions complete	routine perioperative care	postop rehabilitation

		* 8 weeks			
Weidenhielm	physiotherapist supervised	land based: strengthening, stretching, aerobic,	not reported	no intervention	not reported
1993	exercise + home exercise	supervised by physiotherapist, 3 times/week			
		* 5 weeks; + home exercise daily			
Williamson	physiotherapist supervised	land based: strengthening, stretching, balance,	not reported	education and leaflet	not reported
2007	exercise + home exercise	supervised by physiotherapist; 1 times/week *		+1 hour supervised	
		6 weeks + home exercise		class + home exercise	

NEMEX: neuromuscular exercise programme